

urine was received into a tube containing solution of persulphate of iron. A distinct blue deposit left no doubt of the presence of ferrocyanide, whilst the unaltered colour of the supernatant fluid indicated the absence of the sulphocyanide.

From these experiments Mr. Day concludes: 1. That strychnia and prussic acid cannot be conveyed into the system by the lymphatics. 2. That the non-absorption of these poisons is due to a specific action exerted by them on the coats of the lymphatics, by which the irritability of these vessels is destroyed, and they are rendered incapable of transmitting their contents.

From the dissimilarity in the operation of strychnia and prussic acid, it may be reasonably inferred, that most other poisons belonging to the same class will, on investigation, be found to conduct themselves in the same manner towards lymphatic vessels.

4. *Lymphatics of the Lungs*.—Dr. JARJAVAY has given, in the *Archives Générales de Méd.*, (Jan. and Feb. 1847,) a very elaborate account of the lymphatic vessels of the lung; he arranges them, for convenient description, into plexuses, and vessels properly so called, and these are superficial and deep. The *superficial plexuses* are spread upon the lung beneath the pleura; they present varieties in the form of the meshes, which are lozenge-shaped, or round, or variously angular, in the size of the vessels, and in the moniliform character of some. These last are chiefly those in the fissures, and the swellings on them are sometimes of considerable size, whilst the alternating narrow part sometimes impedes, or wholly stops, the flow of mercury through the vessel; this character is named *varicose* by the author, and the simpler condition is distinguished as *capillary*. It is common to find the capillary vessels occupying chiefly the surface of the upper lobe, and a portion of the lower, but the varicose, without exception, in the fissures and on the median face of the lung, especially about its root. The lymphatic plexuses at the borders of the lung, consist of straighter vessels, and are, in fact, the secondary trunks, which in turn discharge themselves in two or three principal vessels; these are, for the lower lobe, two constant and a third occasional; they range the angles of the lung more or less parallel to it, and terminate in the bronchial lymphatic ganglions. The "*vessels*" of the upper and middle lobes are more numerous; they occasionally dip under the surface, because they are overlapped by a lobule, but they always reappear; they assemble to terminate in the bronchial ganglions. It is worthy of remark that the black matter so constant in the lungs, has its seat in the track of the vessels of the varicose plexuses, and thus the pattern of these is mapped out by that black substance. Occasionally, pale lines mark out sundry black spots, these indicate swellings of the lymphatics, and it has often occurred to the author to inject the vessels by plunging his pipe into one of these spots. The *deep plexuses* are said to be those of the mucous membrane of the bronchi, but the author has failed to perceive their primary union with trunks. The *deep vessels* run between the large trunks of the bronchi and those of the pulmonary artery. To the question of how the lymphatics of the lung come into connection with those of the heart, and finally with the thoracic duct, the author's injections have failed to afford a satisfactory answer; he finds, however, that, for the most part, ganglions seated about the roots of the lungs receive the vessels, although he has noticed branches go directly to the thoracic duct, and in other cases join the diaphragmatic, œsophageal, &c. &c. The ganglions about the left bronchus also receive the lymphatics of the heart, which reach them after following the curve of the aorta.—*Report on Anat. and Phys.*, in *Ranking's Abst.*, vol. vi.

## ORGANIC CHEMISTRY.

5. *Oxalate of Lime a Constituent of the Simplest Cellular Plants and of the Secretion of the Mucous Membranes*. By Dr. C. SCHMIDT of Dorpat.—In yeast, which had been left to itself for three weeks, the author observed the formation of a crop of beautiful crystals of oxalate of lime. By a series of careful experiments, he ascertained that this salt existed ready formed in the yeast cells, and could be extracted from them when perfectly fresh; and he concludes, from various circum-

stances, that it must be dissolved in the fluid contents of the cell, as a compound of oxalic acid, albumen, and lime (*oxalsaures albuminkalk*).

As regards the elimination of oxalate of lime from the system, the author considers it impossible that, in the oxalic acid diathesis, it can be found in the stomach, experiment having shown that, when the oxalate of lime is swallowed, it is never found in the urine, the oxalic acid being oxidized in its passage through the system, and thrown off by the lungs and kidneys in the form of carbonic acid. He has never in any case found oxalate of lime, either in the saliva or gastric juice, but very frequently in the urinary sediments. Now, oxalate of lime is totally insoluble in fresh urine, and as, from the structure of the secreting portion of the kidney, it is impossible for the urine to carry with it any insoluble matter, he infers that the oxalate must have a different source from the urea and uric acid, &c., of that fluid; and he concludes that it is a secretion of the mucous membrane of the kidney, and even of the bladder itself, from which it is probably thrown off in the form of the soluble compound above mentioned, and precipitated in the insoluble form by contact with the urine. In proof of this position, he points out that morbid increase of the vesical mucus is always attended by an increase in the oxalate of lime. That this salt is also found in the bile, where it is held in solution by the biliary mucus, and is precipitated when that substance undergoes decomposition, but not till then, as the bile does not, like the urine, possess the property of bringing it into the insoluble state. And lastly, which is his strong proof, he has invariably found the oxalate of lime present in the mucous membrane of the uterus during pregnancy.—*Monthly Journal and Retrospect of Medical Sciences*, April, 1848, from *Annalen der Chemie und Pharmacie*.

6. *On the Variations in the Amount of the Phosphatic Salts in the Urine in Health and Disease.* By Dr. BENCE JONES.—“Mulder has shown, that in inflammation, one of the albuminoid constituents of the blood passes into a higher state of oxidation than that in which it usually exists. Oxides of protein, as he has called them, form the inflammatory crust. Indeed, the whole of the fibrin of the blood is changed into these substances. This alone would give us some reason for expecting, that in inflammations of particular organs, the constituents of these organs would be affected in a similar way. For example, that in inflammations of the brain, we should find the phosphorus of the phosphorized fats oxidized, forming phosphoric acid.

“Now, after a long-continued experiment, which I have been enabled to make on the appearance of phosphatic salts in the urine, the result of nearly a hundred cases of disease, and of many hundred quantitative analyses, has been, that acute affections of the nervous substance, organic and functional, are the only diseases in which an excess of phosphatic salts can be proved to exist in the urine. By phosphatic salts, I do not mean the earthy phosphates alone, but the alkaline phosphates as well as the earthy ones. I obtained and weighed not only the earthy phosphates, but the earthy and alkaline phosphates together—thus determining the total phosphatic salts present in the water. If it could be obtained, the water first passed in the morning was used for analysis; for I found it impossible to obtain, with any approach to accuracy, the whole quantity passed in the twenty-four hours. Had this been possible, it is probable that chronic diseases would have furnished me with positive results.

“It was necessary, before beginning my experiments on disease, to trace the variations and their causes in the state of health.

“1. I found that the earthy phosphates varied soon after food from 1.91 per 1000 parts of urine, specific gravity 1033.2, to .97 per 1000 urine, specific gravity 1027.3.

“Long after food, they varied from .75 per 1000 urine, specific gravity 1028.0, to .20 per 1000 urine, specific gravity 1028.2.

“The alkaline phosphates, long after food, and soon after exercise, vary from 8.10 per 1000 urine, specific gravity 1028.0, to 6.50 per 1000 urine, specific gravity 1022.8. Soon after food, the quantity varied from 6.67 per 1000 urine, specific gravity 1025.5, to 4.72 per 1000 urine, specific gravity 1033.2.

“Sulphate of magnesia, chloride of calcium, or lime water, taken into the stomach, increased the earthy phosphates at the expense of the alkaline phos-

phates. After sulphate of magnesia had been taken as medicine, the earthy phosphates were found to increase as high as 2.99 per 1000 urine, specific gravity 1027.6; and in a second case, up to 2.93 per 1000 urine, specific gravity 1026.2. The amount of alkaline phosphates was found by experiment to be chiefly influenced by the diet, and to a less extent by exercise.—*Philosophical Transactions*, 1845. I then passed on to the amount of phosphates in disease. I found the variations in the earthy phosphates to be almost independent of the nature of the disease.

"2. In fractures of the spinal column, and in paraplegia, the total amount of the phosphatic salts was slightly above the healthy standard at the early period. When chronic, the total quantity of phosphatic salts was lower than natural.

"3. In some acute diseases, as acute inflammations and fevers, showed no increase.

"4. In some chronic diseases, as Bright's disease, dropsies, scrofulous diseases, exostosis, there was no increase. One case of mollities ossium presented a marked exception.

"5. In chronic diseases of the brain, and in chronic or even acute diseases of the membranes, there was no increase of phosphates.

"6. In fractures of the bones of the skull, when any inflammation of the brain supervened, there was an increase in the total amount of phosphatic salts. When there were no head symptoms, no increase of phosphates was observed, even though other acute inflammations supervened.

"7. In the general paralysis of the insane, no increase of phosphates was observed. Other insane patients presented nothing very remarkable.

"8. In acute inflammations of the brain, there was an excessive amount of phosphates secreted. When the acute inflammation became chronic, no excess was observable.

"9. In some functional diseases of the brain, an excessive amount of phosphates was secreted; this ceased with the delirium. In other cases of delirium, the phosphates were found to be greatly diminished."—*Lancet*, July 29, 1847.

7. *Urea in Normal Sweat*.—Dr. LANDERER has obtained a considerable quantity of urea from the flannel shirts of several persons who had been perspiring freely. In addition to urea, he has also obtained chloride of sodium, traces of sulphates, acetates and lactates, osmazome, and a substance soluble in ether.—*Hellers' Archives*, vol. iv.

## MATERIA MEDICA AND PHARMACY.

8. *Proteine as a Medical Agent*.—E. W. TUSSON states (*Medical Times*, April 22, 1848,) that he has prescribed proteine extensively with very beneficial results as a medical agent, and one calculated to produce a favourable termination in most cases of caries; also in some cases of scrofula, extensive ulcers, debility, diseases of the gums and teeth, rickets, undue lactation, and insufficient secretion of milk. In infancy, where debility exists, and where the functions are not duly carried on, and in some affections of the spine, five grains once or twice daily, will be sufficient for a child, and ten or twelve grains for an adult. He orders it to be taken as a powder, dry, or upon bread and butter.

9. *Aqueous Solution of Opium, acidulated with Muriatic Acid*.—Dr. J. G. NICHOL gives the following formula for this preparation of opium, which he says he has used for the last ten or twelve years, and extols as the best anodyne he has ever used.

Take of the best powdered opium  $\overline{3j}$ ; muriatic acid  $\overline{3j}$ ; distilled water  $\overline{3xix}$ . Mix. Shake the mixture frequently every day during fourteen days, then strain and filter. The dose is from twenty to forty drops, according to circumstances.—*Med. Times*, April 15.

10. *Iodized Oil*.—This preparation has superseded the other forms of iodine at